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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/609,261	06/26/2003	Ramarathnam Venkatesan	MS1-1042US	8089

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EXAMINER	
POLTORAK, PIOTR	
ART UNIT	PAPER NUMBER
2134	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/609,261	VENKATESAN ET AL.	
	Examiner	Art Unit	
	Peter Poltorak	2134	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 July 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/03/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The amendment received on 7/03/07 has been accepted.

   The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.

Response to Arguments

2. Double Patenting rejection is maintained for the reason of record, but the examiner acknowledges applicant's intention to address the rejection once the allowable subject matter is established.
3. In light of applicant's arguments and amendments the 35 USC § 101 rejections are withdrawn.
4. In light of applicant's clarification (using arguments and amendments to claim language) of the exact meaning of claim language, the objections directed towards claims 2, 4, 9, 11, 16 and 18 is withdrawn.

5. In the response to the Non-Final Office Action, applicant appears to argue the newly introduced limitations: "said blind digital signature corresponding to a single element in said Jacobian of said at least one curve", which in applicant's opinion is a unique feature because, applicant argues, in Zhang reference a "signature consists of an element in G and an element in V. Therefore, the signature includes at least two elements".

   Applicant's argument is not found persuasive. The examiner points out that in using the broadest reasonable interpretation signature consisting of an element in G and

an element in V" as the signature including two single elements: a single element in G and a single element in V. More importantly, applicant's arguments suggests that the meaning of the cited fragments were not considered within the full context of Zhang's teaching. See below:

> "To produce a blind signature, the Signer only requires to compute three scalar multiplications in G, while the User requires three scalar multiplications in G, one hash function evaluation and one bilinear pairing computation. The verification operation requires one hash function evaluation, two bilinear pairing computations and one exponentiation in V. One pairing computation can be saved, if a large number of verifications are to be performed for the same identity by precomputing e(QID; Ppub): our signature consists of an element in G and an element in V. *In practice, the size of the element in G (elliptic curve group or hyperelliptic curve Jacobians)* can be reduced by a factor of 2 with compression techniques in [12][13]."

Additionally, the examiner points out that "digital signature corresponding to a single element" does not necessary means that the digital signature corresponds to only a single element, especially since such an interpretation would be a subject to an enablement rejection (it is clear that digital signature in applicant's invention corresponds to more than one element.

6. Claims 1-20 have been examined.

Double Patenting

Claims 1-20 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6, 8-18, 20-29, 31-40 and 42-47 U.S. Patent Application No. 10/609260.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 1-20 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

   The examiner did not provide the support in the specification for the newly introduced limitation: "said blind digital signature corresponds to a single element in the Jacobian of the at least one curve".

Claim Rejections - 35 USC § 103

8. Claims 1-3, 8-10 and 15-17 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Boldyreva ("Efficient Threshold Signature, Mutlisignature and Blind Signature Schemes Based on the Gap-Diffie-Hellman-group signature scheme", 2002).

   Boldyreva discusses blind signatures using Gap-Diffie-Hellman (GDH) group of elements (e.g. "Abstract").

9. As per claims 1, 8 and 15, Boldyreva discloses receiving first data to be blindly signed; establishing parameter data for use with signature generating logic that

encrypts data, said parameter data causing said signature generating logic to select at least one Gap Diffie-Hellman group of elements relating to said curve; determining private key data and corresponding public key data using said signature generating logic; and generating second data by signing said first data with said private key data using said signature generating logic, said second data having a corresponding blind digital signature (e.g. "The blind GDH signature scheme, pg. 12).

10. Boldyreva discussion of blind GDH signatures also reads on claims 2-7.

11. Although, Boldyreva does not explicitly disclose encrypting data based on a Jaocbion of at least one curve, the examiner points out that the choice of encrypting data based on a Jacobian of at least one curve, would have been obvious to one of ordinary skill in the art given that they are well known (e.g. Zhand on pg. 7) and barring any unexpected results.

12. Boldyreva does not explicitly teach computer readable medium and memory used in the data signing.

Zhand discloses real life applications of blind signatures, in which the computers are utilized (Zhand, "Introduction", pg. 1-2), and computers use memory to compute code stored on a readable medium. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to utilize computers (that comprise computer readable medium and memory). One of ordinary skill in the art would have been motivated to perform such a modification in order to provide anonymity of users in electronic applications, such as electronic voiding and payment system.

Furthermore, the examiner points out that an ordinary artisan would readily recognize the value of computers (with memory and readable medium for storing computer code) given the benefit of the inherent nature of computers to compute data.

13. Zhands disclosure discloses that "said blind digital signature corresponds to a single element in the Jacobian of the at least one curve" (see Response to Amendment, above). Furthermore, not only Zhands suggests dissemination of signatures (Zhands, 1.1), but also dissemination of digital signatures is well known in the art, and an ordinary artisan would have been motivated to implement it especially in light of the benefits of digital signatures as evidenced by their commercial success.,

14. Claims 9-14 and 16-20 are substantially equivalent to claims 2-7; therefore claim 9-14 and 16-20 are similarly rejected.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Poltorak whose telephone number is (571) 272-3840. The examiner can normally be reached Monday through Thursday from 9:00 a.m. to 4:00 p.m. and alternate Fridays from 9:00 a.m. to 3:30 p.m

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kambiz Zand can be reached on (571) 272-3811. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

9/10/07

KAMBIZ ZAND
SUPERVISORY PATENT EXAMINER